

CLAIMS:-

1 A wheel condition detection and signalling device comprising:-

a chamber which is capable of being attached to a wheel of a truck to rotate therewith,

5 a pendulum having significant mass and being rotatably mounted within the chamber in such manner that the pendulum remains generally non-rotating during rotation of the chamber,

detector means for detecting an unacceptable condition of the wheel and emitting a signal dependant upon such condition and

10 a transmitter for transmitting that signal to a receiver

wherein

the chamber carries a wire coil which is mounted on a core having two outside parallel arms provided with end faces and

the pendulum carries a series of magnets of opposite polarity,

15 the arrangement being such

that on relative rotation of the chamber and the pendulum, the magnets will pass the end faces of the coil in adjacent relationship, and

that when one magnet is adjacent one end face of the coil, another magnet of opposite polarity is adjacent the other end face of the coil

20 whereby on relative rotation of the coils and the poles, an electric current is generated in the coils to energise the transmitter.

2 A device as claimed in claim 1 wherein the coils are connected to the transmitter so that the power from the coils may be used to power the transmitter directly.

3 A device as claimed in claim 1 further comprising a battery which provides power during no or very slow movement of the wheels.

4 A device as claimed in claim 3 wherein the battery is a rechargeable battery which is connected to the coil so that when the wheel is rotating quickly the battery can
5 be recharged by the electric power in the coil.

5 A device as claimed in claim 3 comprising more than one battery.

6 A device as claimed in claim 1 wherein the magnets are arranged in a circle on the pendulum centred on the axis of rotation of the pendulum and having a diameter approximately equal to the distance apart of the centres of the end faces of the coil.

10 7 A device as claimed in claim 1, wherein there are a double odd number of magnets.

8 A device as claimed in claim 7 wherein there are six magnets.

9 A device as claimed in claim 1 wherein the magnets are arranged with their polar axes parallel to the axis about which the pendulum swings.

15 10 A device as claimed in claim 5 further comprising a metal member against which the magnets bear and which forms a flux path for the magnets.

11 A device as claimed in claim 1 wherein the pendulum comprises an annular part rotatably carried by a bearing and an eccentric weight projecting therefrom.

12 A device as claimed in claim 11 wherein the annular part carries the magnets on one face thereof.

13 A device as claimed in claim 11 wherein the eccentric weight comprises a heavy material.

5 14 A device as claimed in claim 13 wherein the heavy material comprises lead.

15 A device as claimed in claim 13 wherein the eccentric weight has a mass of between 200 gm and 500 gm.

16 A device as claimed in claim 15 wherein the eccentric weight has a mass of between 320 gm and 360 gm.

10 17 A device as claimed in claim 16 wherein the eccentric weight has a mass of about 340 g.

18 A device as claimed in claim 13 wherein the weight is bolted on to a member projecting from the annular part.

15 19 A device as claimed in claim 11 wherein the member further comprises a substantially cylindrical part within which the bearing is received.

20 A device as claimed in claim 11 wherein the cylindrical part has inwardly directed means at its mouth or open end.

21 A device as claimed in claim 20 wherein the cylindrical part is capable of being resiliently distorted to permit the bearing to enter the said part, the arrangement being such that when the part returns from the distorted position, the inwardly directed means extends into the path of the bearing to prevent or inhibit it from being removed from the said part.

22 A device as claimed in claim 21 wherein the cylindrical part is provided with a plurality of pairs of closely spaced cuts or slots that define between them arms which can resiliently swing outwardly.

23 A device as claimed in claim 22 wherein the inwardly directed means are provided at the ends of the said arms.

24 A device as claimed in claim 1 comprising a pressure detection means is incorporated in a chamber which is capable of being connected to a tyre to be subject to the pressure therein.

25 A device as claimed in claim 1 comprising a heat conductor having a part projecting into thermal contact with the part of the wheel and another part in direct or indirect communication with a heat detector connected to the transmitter.

26 A device as claimed in claim 1 comprising a vibration detector.

27 A device as claimed in claim 26 wherein the vibration detector comprises a cylinder with a movable clapper therein.

28 A device as claimed in claim 1 wherein the device is be used on the wheels of a truck.

29 A device as claimed in claim 1 wherein the device is be used on the wheels of a railway carriage.

5 30 A device as claimed in claim 1 wherein there is provided a receiver to receive signals from a similar device and to relay such signals to another device.